

APPENDIX A

1. A method of joining composite parts comprising:
disposing a plurality of reinforcing elements through the thickness of two composite adherends to be joined, at least a number of said reinforcing elements extending from the joint surface of each said adherend;
assembling said adherends so that the joint surface of one said adherend faces the joint surface of the other said adherend defining a joint region therebetween, said extending reinforcing elements interstitially disposed in said joint region; and
disposing an adherent within said joint region about said interstitially disposed reinforcing elements and said joint surfaces.
2. The method of claim 1 in which said adherands are carbon-carbon composite structures.
3. The method of claim 1 in which said reinforcing elements are fibers.
4. The method of claim 1 in which said adherent is a metallic braze material.
6. A method of joining composite parts comprising:
disposing a plurality of reinforcing elements

through the thickness of two composite adherands, said reinforcing elements extending from the joint surface of each said adherand;

assembling said adherands so that the joint surface of one said adherend faces the joint surface of the other said adherand;

disposing an adherent interlayer between said opposing joint surfaces;

urging said extending reinforcing elements of each said adherand through said adherent interlayer and interstitially locking said reinforcing elements therein.

7. The method of claim 6 in which said adherent interlayer is a prepreg material, the method further including the step of curing said material.

9. A method of joining composite parts comprising:
disposing a plurality of reinforcing elements through the thickness of a first composite adherand to be joined, at least a number of said reinforcing elements extending from the joint surface of said first adherand;
assembling said first adherand with a second adherand such that the joint surface of the first said adherand faces the joint surface of the second said adherand at the joint region therebetween, said extending elements of said first adherand disposed against the joint surface of said second adherand; and

disposing an adherent within said joint region.

10. A method of joining composite parts comprising:
- disposing a plurality of reinforcing elements through the thickness of a first composite adherand at the joint surface of said first adherand, at least a number of said reinforcing elements extending from the joint surface of said first adherand;
 - assembling said first adherand with a second adherand such that the joint surface of the first said adherand faces the joint surface of the second said adherand;
 - disposing an adherent interlayer between said opposing joint surfaces; and
 - urging said extending reinforcing elements of said first adherand through said adherent interlayer and against the joint surface of the second said adherand and locking said reinforcing elements therein.

11. The method of claim 10 in which said adherent interlayer is a prepreg material, the method further including the step of curing said prepreg.

12. A method of joining composite parts comprising:
- disposing a plurality of reinforcing elements through the thickness of two composite adherands at the joint surface of each said adherand to be joined;

assembling said adherands so that the joint surfaces of one said adherand faces the joint surface of the opposing said adherand;

disposing an adherent within the joint region defined by said facing joint surfaces and urging said adherent to flow at least partially along the length of said reinforcing elements within said adherands.

13. A method of joining a composite part with a non-composite part comprising:

inserting, through the thickness of said composite part, a plurality of reinforcing elements extending from the joint surface thereof;

assembling said composite part such that said reinforcing elements are proximate the joint surface of said non-composite part; and

brazing said joint surfaces and said reinforcing elements to form a joint.

14. A method of joining composite parts comprising:

inserting, through the thickness of each said composite part, a plurality of reinforcing elements extending from the joint surface thereof;

assembling said composite parts such that said reinforcing elements are interstitially disposed at the joint region therebetween;

selecting a braze material compatible with said

composite parts and said reinforcing elements;

applying said braze material to said joint region;

and

urging said braze material to flow about said interstitially disposed reinforcing elements; and

allowing said braze material to harden.

15. A method of joining composite parts comprising:

inserting, through the thickness of one said composite part, a plurality of reinforcing elements extending from the joint surface thereof;

assembling one said composite part with a second composite part such that said reinforcing elements are disposed about the joint surface of said second composite part;

selecting a braze material compatible with said composite parts, and said reinforcing elements;

applying said braze material to the joint region between said composite parts;

urging said braze material to flow about said reinforcing elements; and

allowing said braze material to harden.

19. A method of joining a composite part with a non-composite part comprising:

inserting, through the thickness of said composite part, a plurality of reinforcing elements at least at the

joint region thereof;

assembling said composite part such that said reinforcing elements are disposed proximate the joint surface of said non-composite part; and

brazing said joint surfaces and urging braze material to flow along the lengths of said reinforcing elements into said composite part.